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PATENT
Docket No.: 011823-004920US
Client Ref. No.: PDL0049-20

On Feb. 18, 2005

TOWNSEND and TOWNSEND and CREW LLP

By: Brenda J. Dolly
Brenda J. Dolly

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

J. YUN TSO

Application No.: 09/618,380

Filed: July 18, 2000

For: HUMANIZED ANTIBODIES
AGAINST CD3

Examiner: L. Helms

Art Unit: 1642

**PETITION TO WITHDRAW HOLDING
OF ABANDONMENT UNDER 37 C.F.R.
1.181(a)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Abandonment mailed January 20, 2005, Applicant respectfully requests withdrawal of the holding of abandonment on the ground that an appropriate response was timely filed.

Transmitted below are copies of documents supporting the fact that the issue fee in question was indeed filed before the deadline:

- 1) Part B - Fee(s) Transmittal - mailed on July 23, 2004, submitting a partial payment of \$30 and indicating that \$1,300 was previously paid;
- 2) Amendment After Allowance Under 37 CFR § 1.312(a) - mailed on July 23, 2004, noting that the Applicants had already paid \$1,300 toward the issue fee and that they no longer claimed small entity status;
- 3) Communication Under 37 CFR § 1.28(c), paper sequence listing and diskette - mailed on July 23, 2004, submitting supplementary fees addressing the change from small entity status; and

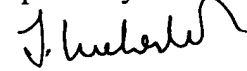
- 4) Return receipt postcard - with the USPTO/OIPE stamp confirming July 26, 2004 as the filing date of documents 1, 2, and 3.
- 5) Communication from the Office of Petitions dated September 22, 2003 granting the decision to withdraw application from issue after payment of the fee.
- 6) Request for Continued Examination (RCE) Transmittal - mailed September 10, 2003;
- 7) Petition to Withdraw from Issue Under 37 CFR § 1.313(c)(2) - mailed September 10, 2003; and
- 8) Return receipt postcard - with the USPTO/OIPE stamp confirming September 10, 2003 as the filing date of documents 6 and 7.
- 9) Part B - Fee(s) Transmittal mailed April 8, 2003 - submitting payment of issue fee in the amount of \$1,300; and
- 10) Return receipt postcard - with the USPTO/OIPE stamp confirming April 14, 2003 as the filing date of document 9.

CONCLUSION

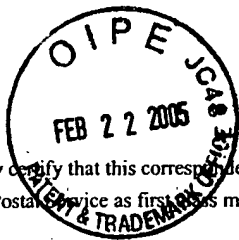
In view of the foregoing, Applicant respectfully requests withdrawal of the holding of abandonment and that the aforementioned documents be entered. No fee is believed to be due, however, if any fee is required, please charge deposit account no. 10-1430.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (650) 326-2400.

Respectfully submitted,


Joe Liebeschuetz
Reg. No. 37,505

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: (415) 576-0200
Fax: (415) 576-0300
JOL:bjd
60422594 v1



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PATENT
Attorney Docket No.: 011823-004920US
Client Ref. No.: PDL0049-20

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On

July 23, 2004

TOWNSEND and TOWNSEND and CREW LLP

By:

Devin Moran

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

J. YUN TSO

Application No.: 09/618,380

Filed: July 18, 2000

For: HUMANIZED ANTIBODIES
AGAINST CD3

Customer No.: 20350

Confirmation No.

Examiner: L. Helms

Technology Center/Art Unit: 1642

AMENDMENT AFTER ALLOWANCE
UNDER 37 CFR § 1.312(a)

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Allowance mailed April 23, 2004, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Remarks/Arguments begin on page 3 of this paper.

Appl. No. 09/618,380
Amdt. dated July 23, 2004
Response to Notice of Allowance April 23, 2004

PATENT

Amendments to the Specification:

Please replace the sequence listing submitted September 9, 2003 with the paper copy of the sequence listing, pages 1-15, enclosed herewith.

REMARKS/ARGUMENTS

1. Sequence Listing

Applicants submit a second substitute sequence listing to correct a previously unidentified typographical error of the substitute sequence listing. Specifically, SEQ ID NO:9 has been corrected to replace the first amino acid "asp" with "glu." This amendment conforms the sequence listing to the corresponding sequence shown in Fig. 5A (lower). No new matter is involved.

This amendment is accompanied by a floppy disk containing the above named sequences, SEQ ID NOS:1-14, in computer readable form, and a paper copy of the sequence information which has been printed from the floppy disk. The information contained in the computer readable disk was prepared through the use of the software program "PatentIn" and is identical to that of the paper copy. This amendment contains no new matter.

2. Other matters

Applicants note for the record that they no longer claim small entity status in the above case.

Applicants further note that they have already paid \$1300 toward the issue fee. Applicants note that the Decision on Petition mailed September 22, 2003 indicated that this sum could be applied to a future issue payment. Hence the amount due is $\$1330 - 30 = 30$.

Applicants also wish to correct a misstatement in the record in the revocation of prior power of attorney executed October 23, 2003. The revocation states that Protein Design Labs, Inc. is the assignee of the entire right, title and interest in the above application. In fact, Iowa Immunotherapy Investigators has rights in claim 43 and is therefore included as a co-assignee of the application.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Appl. No. 09/618,380
Amdt. dated July 23, 2004
Response to Notice of Allowance April 23, 2004

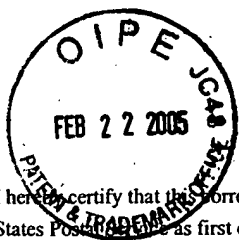
PATENT

Respectfully submitted,



Joe Liebeschuetz
Reg. No. 37,505

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
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JOL:adm
60268195 v1



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PATENT
Attorney Docket No.: 011823-004920US
Client Ref. No.: PDL0049-20

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On July 23, 2004

TOWNSEND and TOWNSEND and CREW LLP

By: D'Evelyn R. Moran
D'Evelyn R. Moran

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

J. YUN TSO

Application No.: 09/618,380

Filed: July 18, 2000

For: HUMANIZED ANTIBODIES
AGAINST CD3

Customer No.: 20350

Confirmation No.

Examiner: L. Helms

Technology Center/Art Unit: 1642

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMUNICATION UNDER 37 C.F.R. §1.28(c)

Sir:

Applicants respectfully request authorization under 37 C.F.R. §1.28(c) to pay supplementary fees and consideration of the remarks set forth herein.

REMARKS

Applicants request to change the entity status of the above captioned application from small entity to large entity. Applicants have noted that a request for continued examination (RCE) filed September 10, 2003 was inadvertently paid at the small entity rate after the change from small to large entity. Applicants wish to submit supplemental large entity fee as follows. The supplemental fee to be paid is set forth below:

Paper	Date	Fee paid	Current Fee	Difference
Request for Continued Examination	1/27/03	\$375	\$770	\$395

The Assistant Commissioner for Patents is hereby authorized to charge the fee of \$395 to Deposit Account No. 20-1430, which Applicants believe is sufficient to make up the deficiency between the amount of the fees paid and the amount of First Maintenance Fee due. However, if necessary, please charge any additionally needed fees to Deposit Account No. 20-1430. This paper is submitted in duplicate.

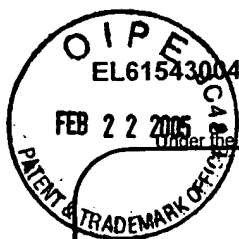
If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Joe Liebeschuetz
Reg. No. 37,505

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
Attachments
JOL/drm
60264265 v1



FILE COPY

PTO/SB/30 (09-03)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.Request
for
Continued Examination (RCE)
TransmittalAddress to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	09/618,380
Filing Date	July 18, 2000
First Named Inventor	George Weiner
Art Unit	1642
Examiner Name	Larry Helms
Attorney Docket Number	05882.0176.CNUS03

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/Declaration(s)
- iv. ☒ Other: **Substitute Seq. Listing (paper copy & computer readable format)**

2. **Miscellaneous**

- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☒ Other **Petition to Withdraw from Issue Under 37 CFR 1.313(c)(2)**

3. **Fees**

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

- a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. **08-3038**
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☒ Other **Petition to Withdraw from Issue Under 37 CFR 1.17(h)**
- b. ☒ Check in the amount of \$ **505.00** enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Albert P. Hallum	Registration No. (Attorney/Agent)	25,277
Signature		Date	September 10, 2003

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Name (Print/Type)	Kory Mingus	Date	September 10, 2003
Signature			

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Application No.: 09/618,380
Attorney Docket No.: 05882.0176.CNUS03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Weiner et al.

Appl. No. 09/618,380

Filed: July 18, 2000

For: HUMANIZED ANTIBODIES
AGAINST CD3

Art Unit: 1642

Examiner: Larry Helms

Confirmation No.: 9002

Atty. Docket: 05882.0176.CNUS03

**Petition to Withdraw from Issue
Under 37 C.F.R. § 1.313(c)(2)**

Mail Stop 313(c)
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

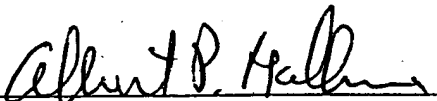
In accordance with 37 C.F.R. § 1.313(c)(12), Applicant petitions the Commissioner for Patents to withdraw the above-referenced application from issue after payment of the issue fee to permit consideration of a Request for a Continued Examination under §1.114.

Errors in the Substitute Sequence Listing filed on December 4, 2002 were brought to Applicant's attention after payment of the issue fee on April 8, 2003. Applicant now submits an amended Substitute Sequence Listing and Preliminary Amendment to correct typographical errors in the prior filed Sequence Listing.

The petition fee as set forth in 37 C.F.R. § 1.17(h) is enclosed. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to Deposit Account 08-3038 referencing attorney docket number 05882.0176.CNUS03. A duplicate copy of this Petition is enclosed for this purpose.

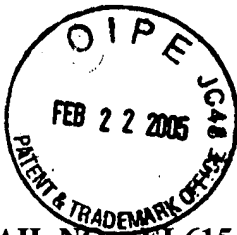
Prompt and favorable consideration of this petition is respectfully requested.

Respectfully submitted,


Albert P. Halluin (Reg. No. 25,227)
Viola T. Kung (Reg. No. 41,131)
Lorelei P. Westin (Reg. No. 52,353)

Date: September 10, 2003

HOWREY SIMON ARNOLD & WHITE, LLP
Box No. 34
301 Ravenswood Avenue
Menlo Park, CA 94025
(650) 463-8109



Application No.: 09/618,380
Attorney Docket No.: 05882.0176.CNUS03

EXPRESS MAIL NO.: EL615430042US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Weiner et al.

Appl. No. 09/618,380

Filed: July 18, 2000

For: HUMANIZED ANTIBODIES
AGAINST CD3

Art Unit: 1642

Examiner: Larry Helms

Confirmation No.: 9002

Atty. Docket: 05882.0176.CNUS03

Preliminary Amendment

Mail Stop 313(c)
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In order to comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures, 37 C.F.R. §§ 1.821-1.825, Applicants now submit a Substitute Sequence Listing to correct typographical errors identified in the paper copy of the Sequence Listing submitted December 4, 2002.

Please find enclosed a Substitute Sequence Listing in the paper and computer readable format to replace the substitute and original paper and CRF Sequence Listings filed for this application on December 4, 2002, July 31, 2000 and October 16, 2001, respectively.

Please amend the specification in adherence with 37 C.F.R. §§ 1.821-1.825 as follows.

IN THE SPECIFICATION:

Please replace the Sequence Listing with the accompanying paper copy of the Substitute Sequence Listing, page numbers 1-16.

REMARKS

Applicants request entry of this amendment in adherence with 37 C.F.R. §§ 1.821 to 1.825. This amendment corrects typographical errors in sequences in the substitute Sequence Listing filed. This amendment also clarifies changes made in the Substitute Sequence Listing submitted on December 4, 2002.

Specifically, this amendment corrects errors in SEQ ID NOS: 4, 6, 7, and 12.

- In SEQ ID NO:4, an Asp to Ala change at amino acid position 88 was inadvertently made in the substitute sequence listing filed on December 4, 2002. The instant amendment corrects this error and reverts the sequence back to "Asp", as was present in the original sequence listing of July 31, 2000. Support for this amendment can also be found in Figure 4B of the instant application.
- In SEQ ID NO:6, a Val, Glu to Glu, Val change at amino acid positions 214, 215 was inadvertently made in the substitute sequence listing filed on December 4, 2002. The instant amendment corrects this error and reverts the sequence back to "Val, Glu", as was present in the original sequence listing of July 31, 2000. Support for this amendment can also be found in Figure 4D of the instant application.
- In SEQ ID NO:6, a Lys to Ala change at amino acid position 268 was inadvertently made in the substitute sequence listing filed on December 4, 2002. The instant amendment corrects this error and reverts the sequence back to "Lys", as was present in the original sequence listing of July 31, 2000. Support for this amendment can also be found in Figure 4D of the instant application.

- In SEQ ID NO:7, a Thr, Phe to Phe, Thr change at amino acid positions 168, 169 was inadvertently made in the substitute sequence listing filed on December 4, 2002. The instant amendment corrects this error and reverts the sequence back to "Thr, Phe", as was present in the original sequence listing of July 31, 2000. Support for this amendment can also be found in Figure 4E of the instant application.
- In SEQ ID NO:12, a Lys, Arg to Arg, Lys change at amino acid positions 106, 107 was inadvertently made in the substitute sequence listing filed on December 4, 2002. The instant amendment corrects this error and reverts the sequence back to "Lys, Arg", as was present in the original sequence listing of July 31, 2000. Support for this amendment can also be found in Figure 4B of the instant application.

In addition, Applicant wishes to clarify changes made in the Substitute Sequence Listing filed on December 4, 2002 regarding SEQ ID NOS: 2, 8 and 9.

- In regards to SEQ ID NO:2, the substitute sequence listing introduced an Ala, Thr to Gly, Asn change at amino acid positions 84 and 85. This amendment sought to correct typographical errors introduced in the originally filed Sequence Listing of July 31, 2000 from the sequence present in Figure 4A. The sequence in Figure 4A reads as "Gly, Asn" at amino acid positions 84 and 85. Therefore, the amendment did not contain new matter.
- In regards to SEQ ID NO:8, the substitute sequence listing introduced an Asp to Ala change at amino acid position 83. This amendment sought to correct typographical errors introduced in the originally filed Sequence Listing of July 31, 2000 from the sequence present in Figure 5A. The sequence in Figure 5A reads as "Ala" at amino acid position 83. Therefore, the amendment did not contain new matter.
- In regards to SEQ ID NO:9, the substitute sequence listing introduced an Asp to Ala change at amino acid position 83. This amendment sought to

correct typographical errors introduced in the originally filed Sequence Listing of July 31, 2000 from the sequence present in Figure 5A. The sequence in Figure 5A reads as "Ala" at amino acid position 83.


Therefore, the amendment did not contain new matter.

However, because a sequence listing error was found in two claimed sequences, SEQ ID NOS: 8 and 9, a new search by the Examiner is required to verify the patentability of the sequences.

This amendment is accompanied by a floppy disk containing the above named sequences, SEQ ID NOS: 1-14, in computer readable form, and a paper copy of the sequence information which has been printed from the floppy disk. The information contained in the computer readable disk was prepared through the use of the software program "PatentIn" and is identical to that of the paper copy.

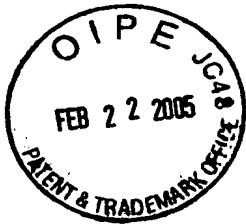
Applicants respectfully request the Examiner to enter the amendments accordingly. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-463-8109.

Respectfully submitted,


Albert P. Halluin (Reg. No. 25,227)
Viola T. Kung (Reg. No. 41,131)
Lorelei P. Westin (Reg. No. 52,353)

Date: September 10, 2003

HOWREY SIMON ARNOLD & WHITE, LLP
Box No. 34
301 Ravenswood Avenue
Menlo Park, CA 94025
Tel: (650) 463-8109
Fax: (650) 463-8400



SEQUENCE LISTING

<110> Weiner, George
Gingrich, Roger
Link, Brian
Tso, J. Yun

<120> HUMANIZED ANTIBODIES AGAINST CD3

<130> 05882-0176-CNUS03

<140> US 09/618,380

<141> 2000-07-18

<150> US 08/397,411

<151> 1995-03-01

<150> US 07/859,583

<151> 1992-03-27

<160> 14

<170> PatentIn version 3.1

<210> 1

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain of Humanized 1D10 Ab minus signal sequence

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Val
35 40 45

Ser Asn Ala Lys Thr Leu Ala Glu Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Lys Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Gly Asn Ser Tyr
85 90 95

Pro Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 2

<211> 107

<212> PRT

<213> Mus sp.

<400> 2

Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

Ser Asn Ala Lys Thr Leu Ala Glu Gly Val Thr Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Lys Gln Phe Ser Leu Lys Ile Asn Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Asn Tyr Tyr Cys Gln His His Tyr Gly Asn Ser Tyr
85 90 95

Pro Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 3

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of Humanized 1D10 Ab minus signal sequence

<400> 3

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr
20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Val Lys Trp Ser Gly Gly Ser Thr Glu Tyr Asn Ala Ala Phe Ile
50 55 60

Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val Ser Leu
65 70 75 80

Lys Leu Asn Ser Leu Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Asn Asp Arg Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 4

<211> 116

<212> PRT

<213> Mus sp.

<400> 4

Gln Val Gln Leu Lys Gln Ser Gly Pro Gly Leu Val Gln Pro Ser Gln
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Gly Ser Gly Phe Ser Leu Thr Asn Tyr
20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Val Lys Trp Ser Gly Gly Ser Thr Glu Tyr Asn Ala Ala Phe Ile
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Phe
65 70 75 80

Lys Met Asn Ser Leu Gln Ala Asp Asp Thr Ala Met Tyr Tyr Cys Ala
85 90 95

Arg Asn Asp Arg Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val
100 105 110

Thr Val Ser Ser
115

<210> 5

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<223> Complete light chain of Humanized 1D10 Ab

<400> 5

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Val
35 40 45

Ser Asn Ala Lys Thr Leu Ala Glu Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Lys Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Gly Asn Ser Tyr
85 90 95

Pro Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 6

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Fd-jun in F(ab'-zipper)2 of humanized 1D10 antibody

<400> 6

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr
20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Val Lys Trp Ser Gly Gly Ser Thr Glu Tyr Asn Ala Ala Phe Ile
50 55 60

Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val Ser Leu
65 70 75 80

Lys Leu Asn Ser Leu Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Asn Asp Arg Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
115 120 125

Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu
130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
145 150 155 160

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
165 170 175

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
180 185 190

Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr
195 200 205

Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr

210

215

220

Cys Pro Pro Cys Lys Cys Pro Ala Gly Gly Arg Ile Ala Arg Leu Glu
 225 230 235 240

Glu Lys Val Lys Thr Leu Lys Ala Gln Asn Ser Glu Leu Ala Ser Thr
 245 250 255

Ala Asn Met Leu Arg Glu Gln Val Ala Gln Leu Lys Gln Lys Val Met
 260 265 270

Asn

<210> 7

<211> 446

<212> PRT

<213> Artificial Sequence

<220>

<223> Complete heavy chain of Humanized 1D10 Ab

<400> 7

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr
 20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Val Lys Trp Ser Gly Gly Ser Thr Glu Tyr Asn Ala Ala Phe Ile
 50 55 60

Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val Ser Leu
 65 70 75 80

Lys Leu Asn Ser Leu Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Asn Asp Arg Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
 115 120 125

Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu
 130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
 145 150 155 160

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
 165 170 175

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
 180 185 190

Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr
 195 200 205

Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 210 215 220

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe
 225 230 235 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 245 250 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 260 265 270

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 275 280 285

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 290 295 300

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 305 310 315 320

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
 325 330 335

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
 340 345 350

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
 355 360 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 370 375 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 385 390 395 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 405 410 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 420 425 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 435 440 445

<210> 8

<211> 106

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain of Humanized M291 Ab minus signal sequence

<400> 8

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
 20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr
 35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
 65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Thr
85 90 95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 9

<211> 106

<212> PRT

<213> Mus sp.

<400> 9

Glu Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

Asn Trp Tyr Lys Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Thr Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 10

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of Humanized M291 Ab minus signal sequence

<400> 10

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile Ser Tyr
20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Tyr Ile Asn Pro Arg Ser Gly Tyr Thr His Tyr Asn Gln Lys Leu
50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ala Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Ala Tyr Tyr Asp Tyr Asp Gly Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 11

<211> 120

<212> PRT

<213> Mus sp.

<400> 11

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile Ser Tyr
20 25 30

Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Arg Ser Gly Tyr Thr His Tyr Asn Gln Lys Leu

50

55

60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Ser Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Ala Tyr Tyr Asp Tyr Asp Gly Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 12

<211> 213

<212> PRT

<213> Artificial Sequence

<220>

<223> Complete light chain of Humanized M291 Ab

<400> 12

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Thr
85 90 95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro
100 105 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
 115 120 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
 130 135 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
 145 150 155 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
 165 170 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
 180 185 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
 195 200 205

Asn Arg Gly Glu Cys
 210

<210> 13

<211> 279

<212> PRT

<213> Artificial Sequence

<220>

<223> Complete heavy chain of Humanized M291 Ab

<400> 13

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile Ser Tyr
 20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

Gly Tyr Ile Asn Pro Arg Ser Gly Tyr Thr His Tyr Asn Gln Lys Leu
 50 55 60

Lys Asp Lys Ala Thr Leu Thr Ala Asp Lys Ser Ala Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Ala Tyr Tyr Asp Tyr Asp Gly Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
130 135 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145 150 155 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
165 170 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
180 185 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
195 200 205

Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp
210 215 220

Lys Thr His Thr Cys Pro Pro Cys Lys Cys Pro Ala Gly Gly Leu Thr
225 230 235 240

Asp Thr Leu Gln Ala Glu Thr Asp Gln Leu Glu Asp Lys Lys Ser Ala
245 250 255

Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Gly Lys Glu Lys Leu Glu
260 265 270

Phe Ile Leu Ala Ala Thr Ser
275

<210> 14

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Leucine zipper motif

<220>

<221> MISC_FEATURE

<222> (2)..(7)

<223> Xaa is any amino acid

<400> 14

Leu Xaa Xaa Xaa Xaa Xaa Xaa
1 5